**Overview of Requirements:**

So I must have misunderstood the requirements previously.

Is this essentially what we are doing?:

On the bus:

-- Build a camera system connected to some computing device (like a raspberry pi)

-- -- consists of both hardware (camera + pc) and software (local application that analyzes video using the algorithm)

-- have the algorithm be used locally to detect events (so video fed to the pi is classified without using data)

-- send only classified events to the cloud (instead of the whole stream, which is costly)

-- pull updated algorithm from the cloud

On web application (the cloud):

-- (Initially) take all of a video feed and manually classify events to train the algorithm

-- (later) take only the events a local system on the bus classified and manually classify it to refine the algorithm

-- (finally) take only events a local system on the buss classified and have it automatically update/refine itself

-- Other capabilities:

-- -- register bus camera systems

-- -- register users/monitors of the web app

-- -- provide alerts when a local system sends an event

-- -- periodically send updated algorithm to local systems registered with the web application

-- -- Provide users/monitors useful statistics

**Original proposed Idea:**

Used for reference to better understand and remember what the Project is, what it needs, etc.

Passenger and driver safety continue to be a challenging problem in transit systems. With increased threat of terrorism, probability of such occurrences is rapidly growing. While there are many in bus camera systems available for monitoring the passenger activities in the bus, due to large cost of associated cellular charges, such solutions are cost prohibitive. As an alternate, bus systems may implement multi camera stream recording for post event evaluation.

**Goal of this project is to build an intelligent event detection system and trigger an alarm when such event occurs.** Such system also provide enhanced security when it monitors passengers board the bus/train with set of luggage and depart the bus with same set of artifacts. In a nutshell, you will be a data collection system simulating bus entry and exit points using video camera. **You will also build camera system for continuously monitoring the inside activity of the bus**. We are interested in detecting four types of events –

• Boarding and exiting passenger baggage discrepancy

• Normal passenger behavior in bus

• Rowdy passenger behavior in the bus

• Quarrel or physical abusive behavior of passengers in the bus

**Deep learning intelligent system can model such behavior**. You will be working with my research assistant to build such advanced intelligent models and integrate in your application. **When system automatically detects such unusual events through deep learning model, your system will upload those events data to cloud for on line monitoring staff**. Your system **must implement device registration** and other required functionality to be useful.

TOOLS

Github

Google Drive

Python

Django Python Web framework

Ubuntu Linux Server (Host web app, database, and users)

Webcam

Microphone